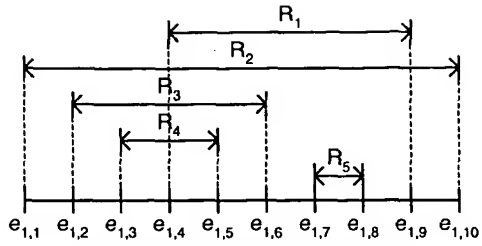
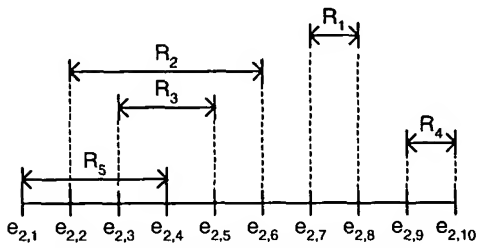
Rule	F_1	F_2	F_3
R_1	$[e_{1,4}, e_{1,9}]$	$[e_{2,7}, e_{2,8}]$	$[e_{3,1}, e_{3,1}]$
R_2	$[e_{1,1}, e_{1,10}]$	$[e_{2,2}, e_{2,6}]$	$[e_{3,2}, e_{3,6}]$
R_3	$[e_{1,2}, e_{1,6}]$	$[e_{2,3}, e_{2,5}]$	$[e_{3,7}, e_{3,9}]$
R_4	$[e_{1,3}, e_{1,5}]$	$[e_{2,9}, e_{2,10}]$	$[e_{3,4}, e_{3,5}]$
R_5	$[e_{1,7}, e_{1,8}]$	$[e_{2,1}, e_{2,4}]$	$[e_{3,3}, e_{3,8}]$

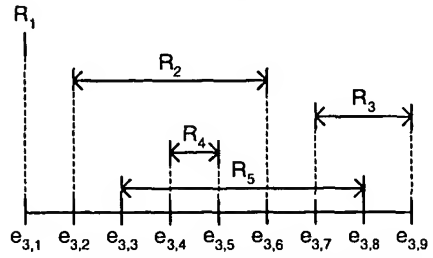
(a) Rule set S



(b) The set of integer intervals $F_1(S)$



(c) The set of integer intervals $F_2(S)$



(d) The set of integer intervals $F_3(S)$

Figure 1 The rule set *S* with 5 rules, each rule has 3 fields

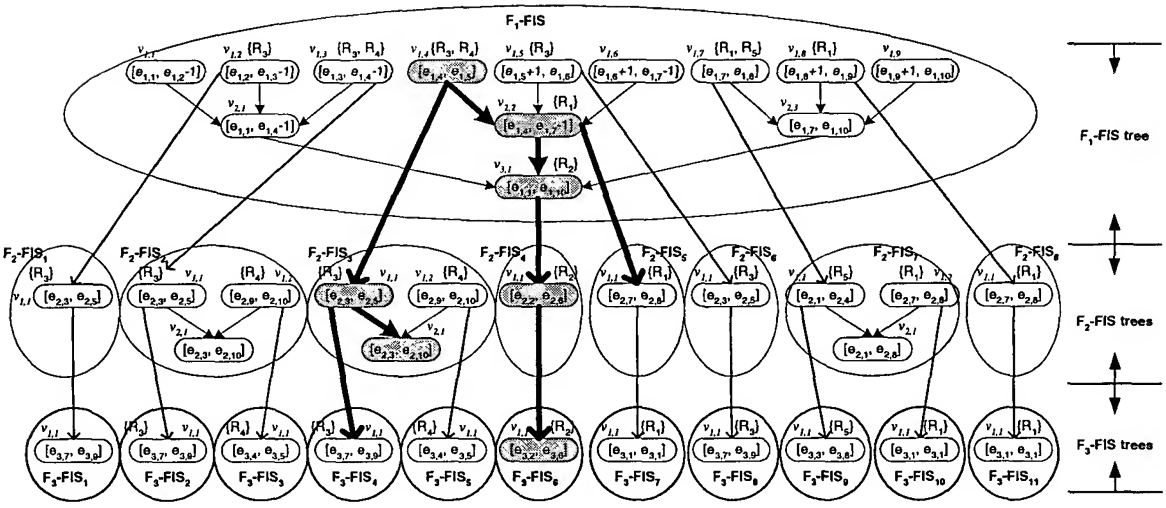


Figure 2 The FIS trees built for the rule set *S* and the searching paths for the packet *P*

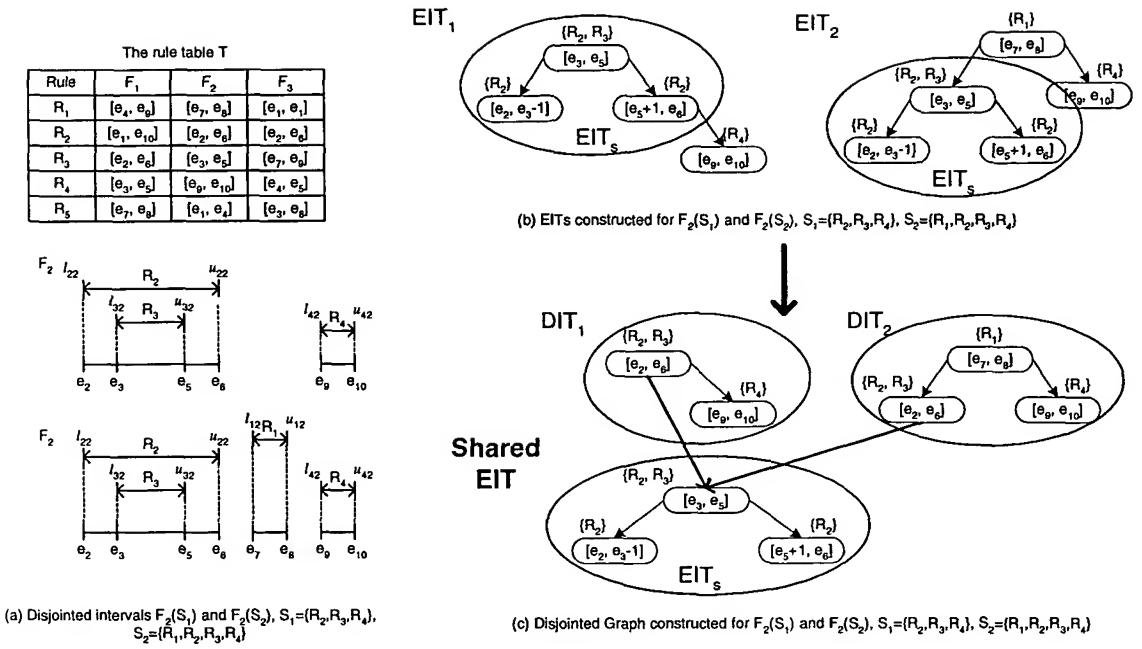


Figure 3 The construction of DITs and EITs

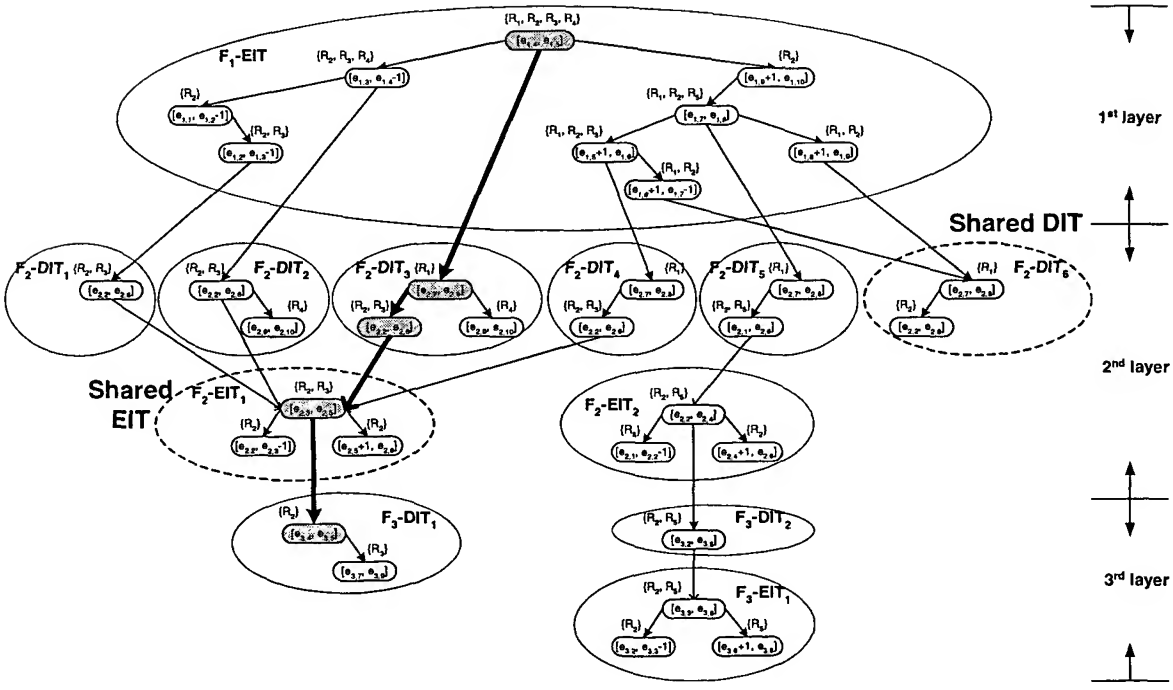


Figure 4 The disjoint graph constructed for the rule set *S* and the searching path for the packet *P*

identifiers	A	B	C
intervals	[10, 30]	[5, 35]	[4, 8]

Figure 5 The intervals set S with 3 intervals

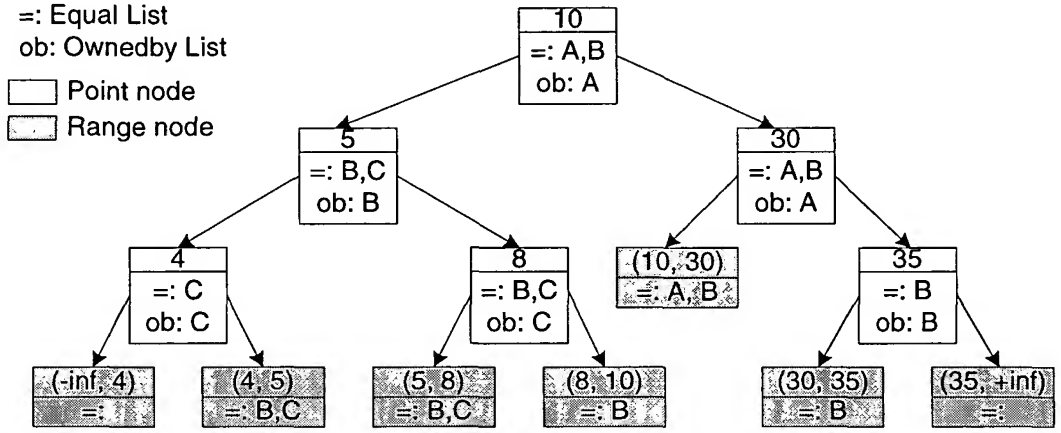


Figure 6 The PR-Tree built for S

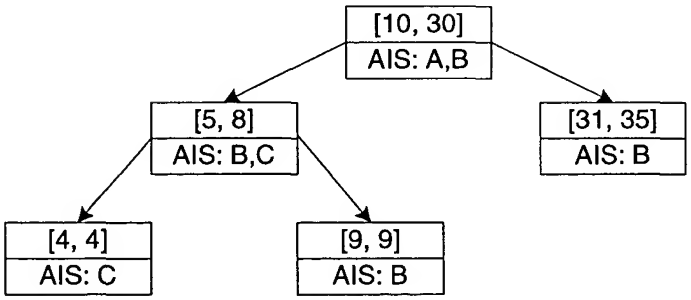


Figure 7 The Elementary Interval Tree built for S

identifiers	A	B	C	D	E
intervals	[10, 30]	[5, 35]	[0, 3]	[4, 8]	[49, 50]

Figure 8 The intervals set *S* with 5 intervals

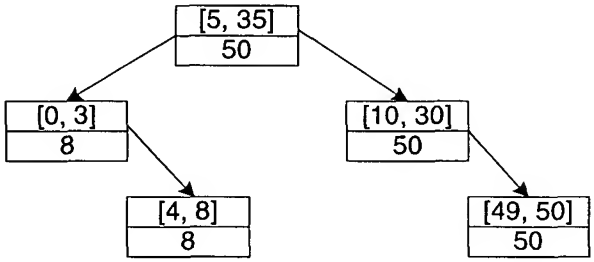


Figure 9 The Interval Tree built for S

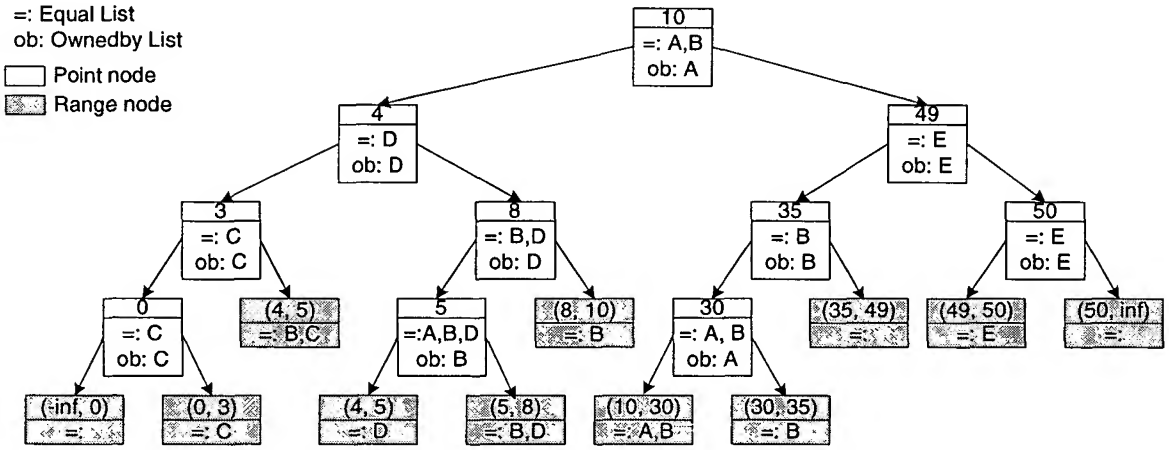


Figure 10 The Point-Range Tree built for S

intervals	[0, 4)	[4, 5)	[5, 10)	[10, 49)	[49, max)
labels	000	001	010	011	100

(a) The set of intervals formed from lower endpoints

intervals	(0, 0]	(0, 3]	(3, 8]	(8, 30]	(30, 35]	(35, 50]	(50, max]
labels	000	001	010	011	100	101	110

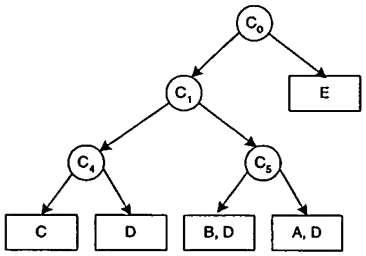
(b) The set of intervals formed from upper endpoints

A	[10, 30]	011	011	011	011
B	[5, 35]	010, 011	01*	010, 011, 100	***
C	[0, 3]	000	000	000, 001	00*
D	[4, 8]	001, 010	0**	010	010
E	[49, 50]	100	100	101	101

(c) The steps to form the Matrix

	C_0	C_1	C_2	C_3	C_4	C_5
A	0	1	1	0	1	1
B	0	1	*	*	*	*
C	0	0	0	0	0	*
D	0	*	*	0	1	0
E	1	0	0	1	0	1

(d) The Matrix formed for the set of intervals



(e) The decision tree built for S

Figure 11 The decision tree built for *S*

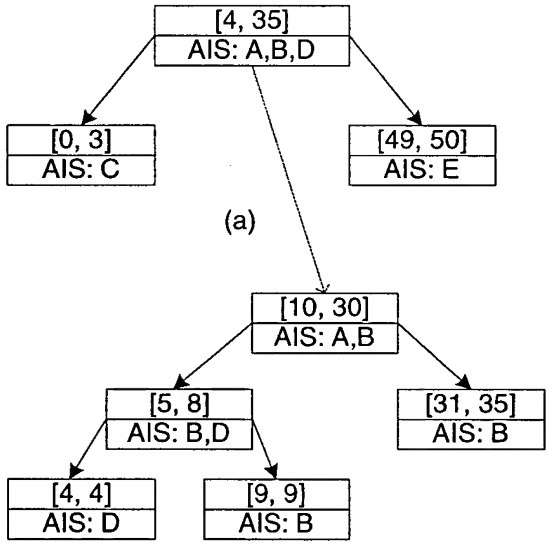


Figure 12 The (a) Disjoint Interval Tree, (b) Elementary Interval Tree built for *S*